



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE  
Northwest Region  
7600 Sand Point Way N.E., Bldg. 1  
Seattle, WA 98115

Refer to:  
OSB2000-0151

July 18, 2000

Mr. Lawrence C. Evans  
U.S. Army Corps of Engineers  
Portland District, CENWP-CO-GP  
P.O. Box 2946  
Portland, Oregon 97208-2946

Re: Webber Property Bank Stabilization on Three Rivers, Tillamook County, Oregon (Permit ID No. 2000-00049)

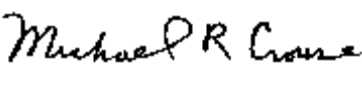
Dear Mr. Evans:

Enclosed is the National Marine Fisheries Service's (NMFS) Biological Opinion (Opinion) for the proposed issuance of a Clean Water Act section 404 permit (Permit ID No. 2000-00049) authorizing Mr. Eugene Webber to riprap 220 feet of bankline on the Three Rivers (River Mile 4) near Hebo, Oregon. The U.S. Army Corps of Engineers requested formal consultation in a letter dated May 23, 2000. NMFS received the request for consultation and a biological assessment describing the proposed action on May 30, 2000. Mr. Eugene Webber has applied for the subject permit. Matt Rosener of the National Resources Conservation Service (NRCS) inspected the site and provided recommendations.

This Opinion considers the potential effects of the proposed action on Oregon Coast coho salmon (*Oncorhynchus kisutch*), which occur in the proposed project area. Oregon Coast coho salmon were listed as threatened under the ESA on August 10, 1998 (63 FR 24998), and critical habitat was designated on February 16, 2000 (65 FR 7764). NMFS concludes that the proposed action is not likely to jeopardize the subject species, or destroy or adversely modify designated critical habitat. Included in the enclosed Opinion is an incidental take statement with terms and conditions to minimize the take of the subject species.

Questions regarding this letter should be directed to Rob Markle of my staff in the Oregon State Branch Office at (503) 230-5419.

Sincerely,

  
For: William Stelle, Jr.  
Regional Administrator



Endangered Species Act  
Section 7 Consultation

**Biological Opinion**

Construction of a Riprap Embankment on Three Rivers, Permit ID No. 2000-00049,  
Tillamook County, Oregon

Agency: U.S. Army Corps of Engineers, Portland District

Consultation Conducted By: National Marine Fisheries Service,  
Northwest Region

Date Issued: July 18, 2000

**Refer to:** OSB2000-0151

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## I. BACKGROUND

The U.S. Army Corps of Engineers (Corps) requested formal consultation on a proposed bank stabilization action on the Three Rivers in a letter dated May 23, 2000. NMFS received the request for consultation and a biological assessment describing the proposed action on May 30, 2000. Mr. Eugene Webber has applied for the subject permit. Matt Rosener of the National Resources Conservation Service (NRCS) inspected the site and provided recommendations.

This biological opinion considers the potential effects of the proposed action on Oregon Coast coho salmon (*Oncorhynchus kisutch*), which occur in the proposed project area. Oregon Coast coho salmon were listed as threatened under the ESA on August 10, 1998 (63 FR 24998), and critical habitat was designated on February 16, 2000 (65 FR 7764). NMFS concludes that the proposed action is not likely to jeopardize the subject species, or destroy or adversely modify designated critical habitat. Included in this opinion is an incidental take statement with terms and conditions to minimize the take of the subject species. This consultation is conducted pursuant to section 7(a)(2) of the ESA and its implementing regulations, 50 CFR 402.

## II. PROPOSED ACTION

High water events of the last several years and the routing of the Three Rivers into what was a secondary channel has exacerbated bank erosion on the Webber property at approximately river-mile 4. Three Rivers is a tributary of the Nestucca River. The property is within a development known as the Three Rivers Ranch at 35705 Big Trout Road. The affected bankline is eroding and threatens loss of the residential structure on-site. The upper bank is manicured lawn with some larger trees. The opposite bank is fairly undisturbed and is vegetated with alder trees and reedcanary grass. The present channel was once the high flow channel. Residential roads cross the river and its tributaries at several locations. Riparian vegetation has been removed and riprap has been installed along banklines throughout the development. The bankline immediately upstream of the Webber property was riprapped approximately 25 years ago (E. Webber, applicant, personal communication, 22 June 2000).

The action proposes to place large rock (1000 lbs) along a 220 foot section of bank at a 1.5:1 (vertical:horizontal) slope. Rock would ascend the embankment to within 3 feet of the edge of bank, measured vertically. A toe trench would be excavated in the streambed to key in the rock. Native vegetation would be planted within and above the riprap slope including willow poles and brushlayering. Native trees and shrubs shall be planted in a strip 10 feet wide paralleling the top of bank from the upstream property line to the house. All work is proposed to occur during the ODFW recommended in-water work window for the Nestucca River and tributaries, July 1-September 15.

Alternatives considered included doing nothing, constructing full bank riprap, vegetative stabilization, and stream barbs. The toe of the bank consists of unconsolidated sand, gravel, and cobble, grading to finer material at the surface. Due to stream velocities and soil type, vegetation alone is unlikely to stabilize the bank. Stream barbs were rejected for the same reason. The no action alternative was also rejected, as loss of additional bankline would threaten the residence. Full riprap would have had greater impacts and required additional mitigation.

### III. BIOLOGICAL INFORMATION AND CRITICAL HABITAT

Although there are currently limited data to assess population numbers or trends, NMFS believes that all coho salmon stocks comprising the OC coho salmon ESU are depressed relative to past abundance. The status and relevant biological information concerning OC coho salmon are well described in the proposed and final rules from the Federal Register (July 25, 1995, 60 FR 38011; and May 6, 1997, 62 FR 24588, respectively), and Weitkamp *et al.* (1995).

Abundance of wild coho salmon spawners in Oregon coastal streams declined during the period from about 1965 to roughly 1975 and has fluctuated at a low level since that time (Nickelson *et al.* 1992). Spawning escapements for this ESU may be at less than 5% of abundance from that in the early 1900s. Contemporary production of coho salmon may be less than 10% of the historic production (Nickelson *et al.* 1992). Average spawner abundance has been relatively constant since the late 1970s, but preharvest abundance has declined. Average recruits-per-spawner may also be declining. The OC coho salmon ESU, although not at immediate danger of extinction, may become endangered in the future if present trends continue (Weitkamp *et al.* 1995).

Timing of adult coho salmon river entry is largely influenced by river flow. Coho salmon normally wait for freshets before entering rivers. In the Nestucca River watershed, adults return between September and January (C. Knutsen, ODFW, personal communication, 29 June 2000) with peak upstream migration usually occurring in October when the fall rains return (Weitkamp *et al.* 1995). OC coho salmon spawn in the Nestucca River basin between mid-November and mid-December with peak spawning occurring in late-November to early-December (Weitkamp *et al.* 1995). Juvenile coho salmon rear for one year in fresh water before migrating to the ocean. Juvenile OC coho salmon migrate out of the Nestucca River basin as smolts between March and May (C. Knutsen, ODFW, personal communication, 29 June 2000). Peak outmigration typically occurs in late-April or early-May (Weitkamp *et al.* 1995).

Critical habitat for OC coho salmon includes Oregon coastal river basins (freshwater and estuarine areas) between Cape Blanco and the Columbia River. Freshwater critical habitat includes all waterways, substrates, and adjacent riparian areas—areas adjacent to a stream that provides the following functions: shade, sediment, nutrient or chemical regulation, streambank stability, and input of large woody debris or organic matter—below longstanding, natural impassable barriers (i.e., natural waterfalls in existence for at least several hundred years) and several dams that block access to former coho salmon habitat. The proposed action would occur in designated critical habitat for OC coho salmon.

### IV. EVALUATING PROPOSED ACTIONS

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). NMFS must determine whether the action is likely to jeopardize the listed species and/or whether the action is likely to destroy or adversely modify designated critical habitat. This analysis involves the initial steps of (1) defining the biological requirements and current status of the listed species, and (2) evaluating the relevance of the environmental baseline to the species' current status.

Subsequently, NMFS evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NMFS must consider the estimated level of mortality attributable to: (1) Collective effects of the proposed or continuing action, (2) the environmental baseline, and (3) any cumulative effects. If NMFS finds that the action is likely to jeopardize the listed species, NMFS must identify reasonable and prudent alternatives for the action.

Furthermore, NMFS evaluates whether the action, directly or indirectly, is likely to destroy or adversely modify the listed species' designated critical habitat. NMFS must determine whether habitat modifications appreciably diminish the value of critical habitat for both survival and recovery of the listed species. NMFS identifies those effects of the action that impair the function of any essential element of critical habitat. If NMFS concludes that the action will destroy or adversely modify critical habitat, it must identify any reasonable and prudent measures available.

For the proposed action, a jeopardy analysis by NMFS considers direct or indirect mortality of fish attributable to the action. A critical habitat analysis by NMFS considers the extent to which the proposed action impairs the function of essential elements necessary for migration, spawning, and rearing of OC coho salmon under the existing environmental baseline.

## **A. Biological Requirements**

The first step in the methods NMFS uses for applying the ESA section 7(a)(2) to listed salmon is to define the biological requirements of the species most relevant to each consultation. NMFS also considers the current status of the listed species taking into account population size, trends, distribution and genetic diversity. To assess the current status of the listed species, NMFS starts with the determinations made in its decision to list OC coho salmon for ESA protection and also considers new data available that are relevant to the determination (Weitkamp *et al.* 1995).

The relevant biological requirements are those necessary for OC coho salmon to survive and recover to naturally reproducing population levels at which protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment.

For this consultation, the biological requirements are improved habitat characteristics that function to support successful spawning, rearing, and migration. The current status of the OC coho salmon, based upon their risk of extinction, has not significantly improved since the species was listed and, in some cases, their status may have worsened.

## **B. Environmental Baseline**

The environmental baseline is an analysis of the effects of past and on-going human and natural factors leading to the current status of the species or its habitat and ecosystem within the action area. The action area is defined as all areas to be affected directly or indirectly by the Federal action (or Federally permitted action) and not merely the immediate area involved in the action (50 CFR 402.02). Direct effects occur at the project site and may extend upstream or downstream based on the potential for impairing fish passage, hydraulics, sediment and pollutant discharge, and the extent of riparian habitat

modifications. Indirect affects may occur throughout the watershed where actions described in this opinion lead to additional activities or affect ecological functions contributing to stream degradation. For this consultation, the action area includes the affected bankline and areas that may be affected by increased turbidity during construction.

The bulk of production for the OC coho salmon ESU is skewed to its southern portion where the coastal lake systems (e.g. Tenmile, Tahkenitch, and Siltcoos Basins) and the Coos and Coquille Rivers are more productive. The proposed action area is located in the northern half of the ESU where production is more depressed and habitat in the action area is underseeded. OC coho salmon spawn in the Three Rivers and utilize the stream for rearing.

The Three Rivers originates in the coastal mountains of Siuslaw National Forest and flows approximately 13 miles to the Nestucca River (ODFW 1994). The Three Rivers/Nestucca River confluence is located at river-mile 10 of the Nestucca River. The watershed is 38 square miles and predominately consists of coniferous forests. Winters are typified as mild and wet, while summers are cool and relatively dry.

Air temperatures for the Nestucca Watershed range from an average low of 36 degrees to an average high of 73 degrees Fahrenheit (USFS *et al.* 1994). The average annual precipitation measured at Cloverdale is 85 inches (n=47) (WRCC 2000). Most precipitation in the Nestucca River Basin occurs as rain, with approximately 76 percent of the annual average falling from October through March (WRCC 2000).

Ancient landslides are more common in the Three Rivers basin than any other basin within the Nestucca Watershed (USFS *et al.* 1994). Landslide topography, deep soils with high water holding capacities, and high precipitation have resulted in high stream densities for the area. Within the Three Rivers system there are an average of 8.8 stream miles per square mile (USFS *et al.* 1994).

Land use management has resulted in impacts to riparian areas by timber harvest, agricultural development, and road construction. In the 30 years prior to 1994, nearly 21 percent of the forestland in the Three Rivers basin had been harvested and 156 miles of road constructed (USFS *et al.* 1994). Relative to the remainder of the Nestucca Watershed, this represents a relatively low level of impact. However, potential sediment production is great due to the high road and stream densities.

The potential for fish production in the Three Rivers is thought to be high with 10.7 miles of low gradient stream, however, fish migration has been restricted by a weir located at ODFW's Cedar Creek Fish Hatchery. Recently hatchery procedures have changed to allow passage of native stock coho salmon.

Streams in the Three Rivers basin typically lack adequate large woody material (USFS *et al.* 1994). The result is a reduction in habitat complexity and stream shading in basin streams. The Nestucca Watershed Analysis (USFS *et al.* 1994) identified riparian plantings, both for shade and streambank stabilization, as needed along many miles of private stream sections on the Three Rivers. Monitoring in 1994 showed increasing water temperatures from the upper reaches to the mouth of the Three Rivers. Cedar Creek had the lowest temperatures measured in the Nestucca Watershed, ranging from 51 to 57 degrees Fahrenheit.

The Three Rivers does not appear on the Oregon Department of Environmental Quality (ODEQ) 303(d) List of Water Quality Limited Water Bodies. However, the Nestucca River from its mouth to Powder Creek is listed as temperature limited (summer) and for flow modification (ODEQ 2000). In 1994, the seven day average of daily maximum temperatures exceeded the standard (64°F) throughout this reach. Historic readings at Beaver Creek indicate temperature exceedences occurring in 1983, 1984 and 1985. Instream Water Rights are often not at the USGS gage located near the town of Beaver, Oregon (ODEQ 2000). Stream flow reductions have been identified as a contributing factor to coho salmon declines.

## **V. ANALYSIS OF EFFECTS**

### **A. Effects of Proposed Actions**

Rivers are dynamic systems that perpetually alter their courses in response to multiple physical criteria. Residences and other structures constructed along waterways are subject to flooding and undercutting as a result of these natural changes in stream course. Structural embankment hardening has been a typical means of protection for structures located along waterways. Impacts to waterways from revetment installation are simplification of stream channels, alteration of hydraulic processes, and prevention of natural channel adjustments (Spence *et al.* 1996). Moreover, embankment hardening may shift the erosion point either upstream or downstream of the subject site and contribute to stream velocity acceleration. As erosive forces impact different locations and bank hardening occurs in response, the river eventually attains a continuous fixed alignment lacking habitat complexity (COE 1977).

Fish habitat is enhanced by the diversity of habitat at the land-water interface and adjacent bank (COE 1977). Streamside vegetation provides shade which reduces water temperature. Overhanging branches provide cover from predators. Organisms that fall from overhanging branches may be preyed upon by fish. Immersed vegetation, logs, and root wads provide points of attachment for aquatic prey organisms, shelter from swift currents during high flow events, and retain bed load materials.

The most desirable method of bank protection is revegetation. However, revegetation alone can seldom stabilize banks steeper than 3:1 (vertical:horizontal) or areas of high velocity (COE 1977). Biologically less desirable, fixed structures provide the most reliable means of bank stability. The use of structural measures should be a last resort. Combining structural measures (i.e. sloped riprap or mechanically stabilized earth walls) and vegetation is preferable to an unvegetated structural solution. The least preferable alternative is a vertical bulkhead (COE 1977).

The proposed action is replacement of a natural 10 foot vertical cut bank with a vegetated rock slope toe and vegetation/jute matted top slope. All work is proposed to occur from the top of bank. Toe trench excavation and rock placed at the toe may occur in the wet. If excavation occurs in the wet, sediment can be expected to become suspended and transported downstream. Furthermore, fill materials placed at the base of the existing bank and soils exposed while pulling back the bank could be carried into the Three Rivers during a rain event. An increase in turbidity could impact fish and filter-feeding macro-invertebrates downstream of the work site.



To minimize the potential for stream turbidity and direct impacts to fish, work would occur during the ODFW recommended in-water work window (July 1 to September 15). During this window, river flows are typically low, fish presence is reduced, and rainfall is minimal. Low flows would allow a majority of the work to occur in the dry, thereby reducing indirect (turbidity) and direct impacts to fish. Fish presence is minimal with rearing juveniles potentially present, but no adult spawning or egg incubation occurring. The low probability of rainfall reduces the likelihood that sediment would be transported into the river. Based on data provided by the Western Regional Climate Center (2000) for Cloverdale, average rainfall during the work window represents 5.2 percent of the annual with less than a 10 percent probability of receiving 0.5 inches of rainfall on any given day. The precipitation probability increases greatly after mid-September, as does the potential presence of returning adult coho salmon.

As with all construction activities, there is potential for accidental release of fuel, oil, and other contaminants to the waterway. To minimize this potential, no equipment would enter below the break in bank or the ordinary high water elevation. All equipment would work from above the bankline and would be serviced away from any water bodies. Best Management Practices (BMPs) required by the Corps and/or the State of Oregon would further minimize the potential for accidental release of hazardous materials.

## **B. Effects on Critical Habitat**

The NMFS designates critical habitat based on physical and biological features that are essential to the listed species. Essential features of designated critical habitat include substrate, water quality, water quantity, water temperature, food, riparian vegetation, access, water velocity, space and safe passage. The proposed action area would occur within designated critical habitat for OC coho salmon.

The presence of the Webber residence and other bank development in the area affects critical habitat in the long-term by restricting natural channel forming processes, altering stream hydrology, reducing riparian vegetation, increasing stream temperature, and reducing allochthonous input. In addition, Peters *et al.* (1998) found that densities of juvenile coho salmon were generally reduced at riprapped sites when compared to areas containing large woody debris or undercut banks. Willows planted within and around the riprap may provide limited shade, cover, and allochthonous input in the long-term. Trees planted along top of slope should further aid in mitigating the loss of a dynamic natural bank.

Short-term impacts resulting from the proposed action could occur from turbidity and debris contribution to the waterway during construction activities and storm events during construction. These effects would be largely ameliorated by project timing (i.e., dry season) as described above in *Effects of Proposed Action*.

While the proposed project represents a net detriment to the existing natural system, beneficial aspects include removal of a sediment source and reestablishment of some riparian vegetation. These aspects would serve to reduce stream turbidity and offer some restoration of riparian function to the embankment.

## **C. Cumulative Effects**

Cumulative effects are defined in 50 CFR 402.02 as those effects of "future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." Future Federal actions, including the ongoing operation of hydropower systems, hatcheries, fisheries, and land management activities are being (or have been) reviewed through separate section 7 consultation processes. Therefore, these actions are not considered cumulative to the proposed action.

The NMFS is not aware of any specific future non-Federal activities within the action area that would cause greater impacts to listed species than presently occurs. However, development of homes on lots within the subdivision and vegetation clearing along the streams is likely to continue. The NMFS assumes that future private and state actions will continue at similar intensities as in recent years.

## **VI. CONCLUSION**

Based on the available information, NMFS has determined that the proposed action is not likely to jeopardize the continued existence of OC coho salmon or adversely modify designated critical habitat. In reaching this conclusion, NMFS determined that the survival and recovery of OC coho salmon would not be appreciably diminished by the proposed action. In summary, our conclusion is based on: (1) All work would occur during the ODFW recommended in-water work window of July 1-September 15, which would minimize the presence of migrating and spawning OC coho salmon at the project site and allow work to occur during the dry season; (2) the rock slope would be limited to 3 feet below edge of bank to provide bank protection; (3) rock would be individually placed by an excavator or backhoe working from the top of bank; (4) vegetation would be planted within and upslope of the rock and would achieve an 80 percent survival success after 3 years, thus providing some degree of riparian function; and (5) potential effects from chemical contamination would be minimized or possibly eliminated as all refueling and servicing would not occur near any water bodies and equipment would be free of leaks and contaminants.

## **VII. CONSERVATION RECOMMENDATIONS**

Section 7(a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Conservation recommendations are *discretionary* measures suggested to minimize or avoid adverse effects of a proposed action on listed species, to minimize or avoid adverse modification of critical habitat, or to develop additional information.

The NMFS recommends that every effort be made to retain existing trees found along the edge of bank and to conduct plantings in consultation with a botanist experienced in streambank restoration. Achievement of planting success is highly dependent upon the methodology employed during planting. Prior to commencing construction, the development of a planting plan is suggested. Such a plan, developed in corporation with a botanist experienced in planting within riprap, would greatly increase the likelihood of achieving the required 80 percent survival. Furthermore, it is anticipated that irrigation of plantings during the initial dry season would be necessary.

## VIII. REINITIATION OF CONSULTATION

This concludes formal consultation on these actions in accordance with 50 CFR 402.14(b)(1). Reinitiation of consultation is required: (1) If the action is modified in a way that causes an effect on the listed species that was not previously considered in the biological assessment and this biological opinion; (2) new information or project monitoring reveals effects of the action that may affect the listed species in a way not previously considered; or (3) a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16).

## IX. REFERENCES

Section 7(a)(2) of the ESA requires biological opinions to be based on the best scientific and commercial data available. This section identifies the data used in developing this Opinion.

Nickelson, T.E., J.W. Nicholas, A.M. McGie, R.B. Lindsay, D.L. Bottom, R.J. Kaiser, and S.E. Jacobs. 1992. Status of anadromous salmonids in Oregon coastal basins. Oregon Department of Fish and Wildlife, Research Development Section and Ocean Salmon Management, 83 p. Oregon Department of Fish and Wildlife, P.O. Box 59, Portland.

Oregon Department of Environmental Quality (ODEQ). 2000. Oregon's Final 1998 Water Quality Limited Streams - 303(d) List. <<http://waterquality.deq.state.or.us/WQLData/RecordID98.asp?recordidreq=2972>>. Accessed on June 26, 2000.

Oregon Department of Fish and Wildlife (ODFW). 1994. Oregon Rivers Information System database. Oregon Department of Fish and Wildlife, Portland, OR.

Peters, Roger J., Brian R. Missildine, and David L. Low. 1998. Seasonal fish densities near river banks stabilized with various stabilization methods. U.S. Fish and Wildlife Service, Lacey, Washington. 32p.

Spence, B.C., G.A. Lomnický, R.M. Hughes, and R.P. Novitzki. 1996. An ecosystem approach to salmonid conservation. TR-4501-96-6057. ManTech Environmental Research Services Corp., Corvallis, Oregon. (Available from the National Marine Fisheries Service, Portland, Oregon). 356 p.

United States Army Corps of Engineers (COE). 1977. Nehalem Wetlands Review: A Comprehensive Assessment of the Nehalem Bay and River (Oregon). U.S. Army Engineer District, Portland, Oregon.

United States Forest Service, Bureau of Land Management, Environmental Protection Agency, National Marine Fisheries Service, Soil Conservation Service, and the United States Fish and Wildlife Service (USFS *et al.*). 1994. Pilot Watershed Analysis for the Nestucca River. Washington, D.C. October 1994.

Weitkamp, L.A., T.C. Wainwright, G.J. Bryant, G.B. Milner, D.J. Teel, R.G. Kope, and R.S. Waples. 1995. Status review of coho salmon from Washington, Oregon, and California.

National Marine Fisheries Service, Northwest Fisheries Science Center, Seattle, Washington.

Western Regional Climate Center (WRCC). 2000. Cloverdale, Oregon (351682): Monthly Total Precipitation. URL <<http://www.wrcc.dri.edu/cgi-bin/cliMONtpre.pl?orclov>>. Accessed June 26, 2000.

## **X. INCIDENTAL TAKE STATEMENT**

Sections 4(d) and 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. Harass is defined as actions that create the likelihood of injuring listed species to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of Section 7(b)(4) and Section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. If necessary, it also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency *must comply* in order to implement the reasonable and prudent measures.

### **A. Amount or Extent of Take**

The NMFS anticipates that the proposed action covered by this biological opinion has more than a negligible likelihood of incidental take of juvenile OC coho salmon resulting in the long term from removal of potential natural rearing habitat due to the use of riprap. Effects of actions such as these are largely unquantifiable in the short term, and are not expected to be measurable as long term effects on the species' population levels. The effects of these activities on population levels are also largely unquantifiable and not expected to be measurable in the long term.

Therefore, even though NMFS expects some low level of incidental take to occur due to the action covered by this biological opinion, the best scientific and commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take to the species itself. In instances such as this, the NMFS designates the expected level of take as unquantifiable. Based on the information provided, NMFS anticipates that an unquantifiable but low level of incidental take could occur as a result of the action covered by this biological opinion. Moreover, the small amount of take that may occur is expected to be non-lethal.

## **B. Reasonable and Prudent Measures**

The NMFS believes that the following reasonable and prudent measures are necessary and appropriate to minimize take of the above species. Minimizing the amount and extent of take is essential to avoid jeopardy to the listed species.

1. To minimize the amount and extent of incidental take from construction activities within the proposed action area, measures shall be taken to limit the duration and extent of in-water work, and to time such work to occur when the impacts to fish are minimized.
2. To minimize the amount and extent of incidental take from construction activities in or near watercourses, effective erosion and pollution control measures shall be developed and implemented to minimize the movement of soils and sediment both into and within watercourses and to stabilize bare soil over both the short term and long term.
3. To minimize the amount and extent of take and to minimize impacts to critical habitat, measures shall be taken to minimize impacts to riparian and in-stream habitat, or where impacts are unavoidable, to replace lost riparian and in-stream function.
4. To ensure effectiveness of implementation of the reasonable and prudent measures, all erosion control measures shall be monitored and evaluated both during and following construction and meet criteria as described below in the terms and conditions.

### **C. Terms and Conditions**

In order to be exempt from the prohibitions of section 9 of the ESA, the Corps must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are *non-discretionary*.

1. In-water work:
  - a. The applicant shall arrange a meeting between ODFW and the contractor/engineer to discuss project plans and scheduling prior to commencing any work on-site.
  - b. All work shall be completed within the ODFW recommended in-water work period of July 1 to September 15. No work shall take place outside this period without prior written authorization from the Corps (in consultation with ODFW and NMFS).
  - c. Alteration or disturbance of the stream banks and existing riparian vegetation shall be minimized.
  - d. Rock shall be individually placed in such a manner as to produce an *irregularly* contoured face to provide velocity disruption. No end dumping shall be allowed.
2. Planting and Seeding
  - a. Disturbed soils shall be seeded (see item “b” in Erosion Control section below).

- b. Willow brush layering and posts shall be planted within the riprap slope during construction.
- c. Live willow stakes shall be planted on 18-inch centers from the top of the riprap slope to the top of bank along the entire length of the disturbed bank.
- d. Native trees shall be planted on 10-foot centers and native shrubs on 5-foot centers from the top of the streambank to a point approximately 10-feet inland along the entire length of the disturbed bank.
- e. All plantings shall occur prior to April 15, 2001.

### 3. Erosion Control

- a. Biobags, weed-free straw bales and loose straw may be used for temporary erosion control. Temporary erosion and sediment controls shall be used on all exposed slopes during any hiatus in work exceeding 7 days.
- b. Permanently stabilize exposed soil surfaces at finished grade immediately upon completion of disturbance. Permanent stabilization shall include grass seeding and mulching.
- c. All erosion control devices shall be inspected during construction to ensure that they are working adequately.
- d. If applicable, silt fences or other detention methods shall be installed to reduce the amount of sediment entering aquatic systems.
- e. A supply of erosion control materials (e.g., straw bales and clean straw mulch) shall be kept on hand to respond to sediment emergencies.
- f. Material removed during excavation shall only be placed in locations where it cannot enter sensitive aquatic resources. Conservation of topsoil (removal, storage and reuse) shall be employed.

### 4. Pollution Control

- a. All equipment shall work from above the bankline and shall not enter below the break in bank or ordinary high water elevation.
- b. No pollutants of any kind (i.e., petroleum products) shall come in contact with the area below the ordinary high water.
- c. All equipment shall be fueled and cleaned off-site in an appropriate upland area more than 150 feet from any waterway.

- d. Measures shall be taken to prevent construction debris from falling into any aquatic resource. Any material that falls into a stream during construction operations shall be removed in a manner that has a minimum impact on the streambed and water quality.
  - e. Project actions shall follow all provisions of the Clean Water Act (40 CFR Subchapter D) and Oregon Department of Environmental Quality's (ODEQ) provisions for maintenance of water quality standards not to be exceeded within the Three Rivers (OAR Chapter 340, Division 41). Toxic substances shall not be introduced above natural background levels in waters of the state in amounts which may be harmful to aquatic life.
  - f. The Contractor shall develop an adequate, site-specific Spill Prevention and Countermeasure or Pollution Control Plan (PCP), and is responsible for containment and removal of any toxicants released. The PCP shall include the following:
    - i. A site plan and narrative describing the methods of erosion/sediment control to be used to prevent erosion and sediment for contractor's operations related to disposal sites, borrow pits operations, haul roads, equipment storage sites, fueling operations and staging areas.
    - ii. Identify hazardous products or materials to be used. Include how they will be handled, monitored, inventoried, and stored.
    - iii. Provide a spill containment and control plan that includes: Notification procedures; specific clean up and disposal instructions for different products; quick response containment and clean up measures which will be available on site; proposed methods for disposal of spilled materials; and employee training for spill containment.
  - g. No surface application of fertilizer shall be used within 50 feet of any aquatic resource as part of this permitted action.
5. Monitoring
- a. The finished grade and elevations shall be inspected by the Corps to assure irregular contours were incorporated into riprap embankment.
  - b. Planted areas shall be monitored to assure plantings were performed correctly and confirm an 80 percent or better survival rate after 3 years.
  - c. Plant survival shall be evaluated and failed plantings replaced annually, if replacement would potentially succeed.
  - d. Supporting photo documentation of the site and a written statement of any additional plantings shall be provided annually for 3 years to the NMFS to assist in assuring planting success.



- e. Post-construction access by ODFW and NMFS shall be provided with prior notification to further assess impacts of this activity on fishery resources for a period of 5 years.